

Tolling Options for I-70, Independence to Wentzville



I-70's Capacity and Condition

I-70 was designed and constructed between 1956 and 1965. Its oldest sections are 58 years old (*in fact, the first piece of the nation's interstate highway system was built on I-70 in St. Charles County in 1956*) and its youngest are 49 years old.

The interstate was intended to carry 12,000-18,000 vehicles per day. Today, it carries an average of 28,000 vehicles per day in the corridor's most rural sections, with 10,000-13,000 trucks. At the Kansas City end near I-470, Interstate 70 is carrying more than 98,000 vehicles per day with 25,000 trucks. Where I-64 connects with I-70 near Wentzville, daily traffic is nearly 75,000 vehicles per day with 15,000 trucks.

Interstate 70 is a critical east-west link, spanning 10 states from Maryland to Utah. Some 70 percent of the truck traffic on I-70 originates and terminates from outside the 200-mile study limits of Independence to Wentzville – many of those originate or are destined from locations outside Missouri.

In 2001, MoDOT's first-tier environmental impact statement on Interstate 70, using 1997 data, indicated that 8,300 vehicles on I-70 traveled beyond Missouri's borders and projected that number would grow to 15,000 by 2030. New traffic analysis would need to be completed to update that data to reflect current conditions.

Closing a lane on I-70 between Kansas City and St. Louis for any reason results in immediate backups that stretch for miles, and it will get worse. Traffic projections show that by 2030, most of the corridor from Kansas City to St. Louis will operate in a stop-and-go condition.

MoDOT has made keeping I-70's driving surface and bridges in good condition a priority. Resurfacing treatments, though, don't last long because of the damage that exists beneath the surface. The original pavement and base – some of which dates back to sections of old U.S. Route 40 that was built in the 1920s – has been pounded to bits by years of mounting traffic, heavier loads and increased tire pressures. All of the mainline and crossroad bridges are approaching the need to be replaced. Today's cost of operating and maintaining I-70 in its current condition is \$50-60 million per year. That includes resurfacing, bridge repairs, pothole patching, safety repairs, snow removal, mowing, litter pickup, etc.

Environmental Studies and Tolling Authority

To develop alternatives for I-70 improvements between I-64 and I-470, MoDOT has completed a tiered Environmental Impact Statement (with Records of Decision received in 2001/2006) and a Supplemental EIS (2009). I-70 was given “conditional provisional” status as a pilot toll project on an **existing interstate** by FHWA in 2005 – a status that is coveted by other states. Virginia (now developing a toll project for I-95) and North Carolina are the only other states with this authority.

Other states inquire annually about acquiring Missouri’s unused interstate tolling approval status and it is expected that at some point, FHWA will pull the conditional provisional approval due to inactivity.

MoDOT’s environmental studies developed cost estimates ranging from approximately \$3 billion (three lanes in each direction with about 150 feet of additional right of way needed on one side or the other) to \$4 billion (eight-lane facility including four lanes dedicated to long-haul trucks). In 2010, an internal MoDOT team estimated a project that would add one lane in each direction by filling in the median, with minimal other improvements and right of way needs, would cost \$2 billion.

Federal Authorization

The United States Constitution (Interstate Commerce Clause) allows states to impose and collect tolls on intrastate and interstate users as long as there is no discrimination of a protected class or local economic protectionism (commercial in-state favoritism) in levy and collection of the toll.

The United States Code (Title 23, Section 301) prohibits tolling of interstate highways; however, the Missouri Department of Transportation (MoDOT) received conditional provisional approval to impose and collect tolls on I-70 from the Federal Highway Administration (FHWA) on July 26, 2005. The conditional provisional approval is contingent upon environmental clearance of the I-70 corridor and approval of Missouri’s tolling authority by FHWA. MoDOT received FHWA approval of a tiered Environmental Impact Statement in 2006 and a Supplemental Environmental Impact Statement in 2009 for the segment of I-70 from I-470 to I-64 near Wentzville.

The Cost

The improvement of I-70 comes at a high price; just adding a lane in each direction and reconstruction of existing lanes would cost \$2 billion. Rebuilding with dedicated truck lanes could cost as much as \$4 billion. MoDOT’s existing state and federal resources are insufficient to fund this project and there are no federal programs distributing additional funds to states for

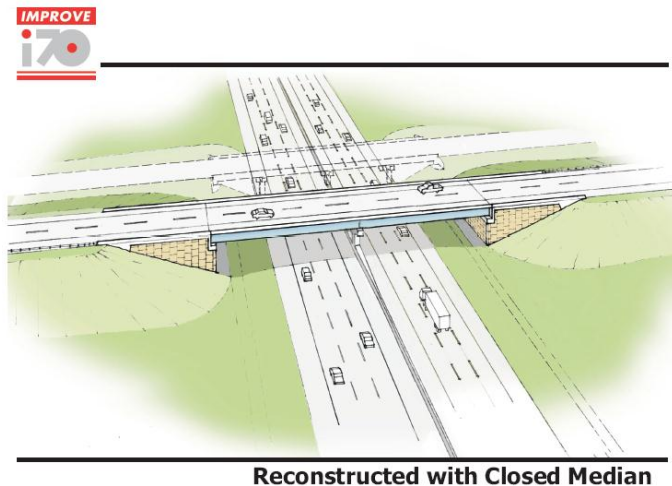
interstate improvements. Currently, MoDOT does not have the ability to incur even \$2 billion of debt because of the Missouri Highways and Transportation Commission's policy that bond payments may not exceed 20 percent of annual revenues. Another public entity (i.e., the State of Missouri, a separate tolling authority, or the like) would need to act as a conduit issuer of debt for any I-70 toll option. Tolling I-70 is a possible way to pay for this project and a public-private partnership is a way to get it quickly underway.

Tolling today does not mean stopping to throw quarters in a basket. MoDOT would use a technologically advanced electronic toll collection system that doesn't require even slowing down or a booth on every ramp.

The precise menu of toll prices, number and locations of toll stations, and other details would need to be answered by detailed investment-grade traffic analysis that would come as part of private-sector proposals. Those proposals would tell MoDOT how Missourians can get the most value for their investment, and what level of private investment could deliver what kind of improvement with what return. In the short term, an updated toll feasibility study may be warranted. MoDOT took a look at potential tolling options in 2002 and 2005, but those numbers need to be updated. A tolling feasibility study could be completed more quickly and at less cost than an investment-grade traffic study.

Improvement Options

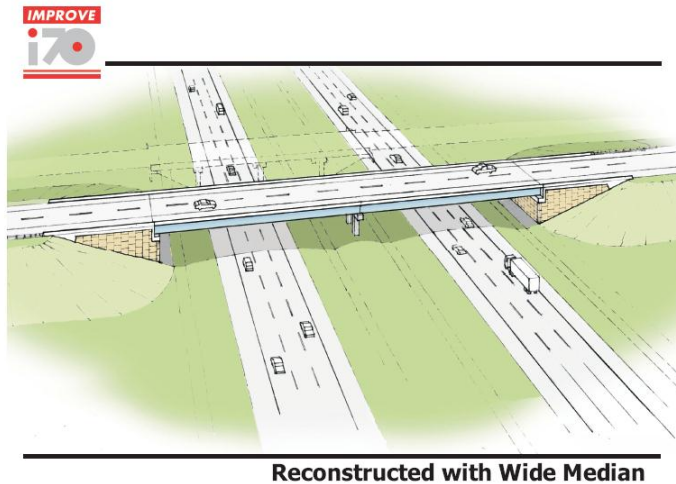
- **Low End – \$2 billion (does not include the cost of tolling infrastructure)** – would replace all of the pavement and add lanes in the existing median. This strategy would mean separating the eastbound and westbound traffic with a concrete barrier wall that would run for 200 miles between I-64 and I-470. Only some of the interchanges would be reconstructed. This strategy has minimal needs for additional right of way because every effort would be made to fit the improvements within the existing footprint. In a six-lane configuration, trucks would be limited to using the two right-hand lanes.



**Selected Alternative from 2006 EIS
Record of Decision -- \$3 billion (does
not include the cost of tolling**

infrastructure) – MoDOT’s tiered EIS, completed in 2006, would replace all of the pavement, rebuild every interchange, and would add a minimum of one lane in each direction. To more easily facilitate construction while maintaining four lanes of traffic, one set of lanes would be built outside the existing lanes. Traffic would then be

shifted to the new lanes while half of the existing lanes were replaced with new lanes. The remaining old lanes would then be removed. The result is a very wide median – 80 to 125 feet – that would be reserved for future transportation options. This strategy would require 150 feet of additional right of way, on one side of I-70 or the other. The wide median would not extend through urban areas, conserving space by utilizing a concrete barrier to separate traffic. In a six-lane configuration, trucks would be limited to using the two right-hand lanes.



- **High End – Selected**

Alternative from 2009 SEIS

Record of Decision – \$4 billion

**(does not include the cost of
tolling infrastructure)**

– In 2006, 800 miles of I-70 across Missouri, Illinois, Indiana and Ohio was designated a national “Corridor of the Future” that was critical to freight movements across the

Midwest. As part of that designation, MoDOT studied an eight-lane reconstructed I-70 with four lanes dedicated to long-haul trucks and four lanes for general purpose vehicles. It fits within the same footprint as the six-lane option with the wide median, and in effect, this strategy utilizes the dedicated truck lanes as the “future transportation option” that was discussed previously. It would enhance safety by dramatically reducing the interaction between trucks and cars. It would facilitate more efficient movement of freight through reduced congestion and could allow for more robust pavement designs in the truck lanes that would accommodate heavier trucks. It would also build truck-car separated interchanges at U.S. Routes 65, 63 and 54. Truck-only lanes also provide for redundancy of the system, allowing traffic to be shifted from one set of lanes to the other to allow traffic to maneuver



around incidents, or to facilitate maintenance activities. Truck-only lanes also strengthen connections to other transportation modes and intermodal facilities.

I-70 Economic Benefits

The Department of Economic Development estimates the long-term economic impact from the I-70 project would create 6,070 jobs per year at an average wage of \$34,118. Over the life of the facility (assumed in the model to be 37 years past construction), the project generates cumulative economic \$5.24 for every dollar invested.

**Within 30 miles
of I-70:**

- 49% of Missouri's employers
- 63% of Missouri's jobs
- 61% of Missouri's population



These numbers are based on a conservative \$2 billion project. A larger project investment would create higher economic benefits.

An increase in employment would occur during the construction years in the form of direct labor on the project, suppliers to the project such as asphalt and concrete, labor industries related to construction and labor increases due to increased discretionary income for employed workers. The increase to new personal income would increase annually by more than \$377 million and Missouri's unemployment rate could be impacted in a positive direction for many years to come.

Project Schedule

Detailed schedules for design and construction of a new I-70 have not yet been developed, but it is anticipated that in concert with a private sector partner the entire process could be completed in six-eight years. The original facility, built largely across virgin ground, was completed in nine years.

<u>Project</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	
I-70 Corridor			Toll Project Authorization							
				Investment Grade Study						
				EIS Re-evaluation						
				Private Sector Partner Procurement						
				Financing						
					SELECTION					
				Preliminary (ROW) Plans						
				ROW Acquisition						
				Final Design						
										Construction

Tolling Programs

Tolls provide a valuable alternative source of revenue both to build new roads and maintain existing roads. Thirty-four states currently have at least one toll facility presenting a variety of tolling options from which to choose. The chart below shows a summary of the procurement options for the I-70 project, including the baseline design-build option that does not include tolling.

Procurement Method	Cost	Associated Cost	Pros	Cons
Design-Build	\$	\$2 billion fixed cost	Lower financing and operating costs	No current funding source
DBO	\$\$	Design-Build cost, Toll Operations, Public finance costs	Public receives excess revenue	Public takes on financial risk, Cost of operating toll facility
DBOM	\$\$\$	Design-Build cost, Toll Operations, Public finance costs, Maintenance & Operation costs	Public receives excess revenue, Private sector responsible for Maintenance & Operation	Higher toll rates, Public takes on financial risk
DBFOM	\$\$\$\$	Design-Build cost, Toll Operations, Private finance costs, Maintenance & Operation costs	New funding source, Private sector takes on financial risk and responsibility for Maintenance and Operation	Higher toll rates, Private sector receives excess revenue
Concessionaire	\$\$\$\$\$	Same as DBFOM	Upfront concession payment provides additional funds for transportation	Higher toll rates, Private sector receives excess revenue

Design Build Operate (DBO)

The Commission would issue toll revenue bonds to design and construct the new I-70 toll facility and to provide interim operating funds. It then would recoup its investment and generate long-term operating funds through the collection of tolls.

Responsibilities

MoDOT would deliver the design-build contract and retain operation and maintenance responsibilities for the new I-70 toll facility. Additional costs would be incurred to design, build and operate the toll facility. The operation of tolls would be managed by MoDOT. Costs to operate tolls would be determined with an investment grade traffic study.

Advantages

The Commission would retain ownership and control over the toll facility and leverage its current delivery methods to obtain the best prices for delivering the new facility. Toll revenues would be received by the State of Missouri.

Public Private Partnerships (P3):

P3s do not create new money but instead leverage private-sector financial and other resources to develop infrastructure. A revenue stream generated by tolls is most commonly used to pay back the private investment.

Roles assumed by the private sector in a P3 can include designing, building, operating, maintaining or financing a facility. Risk allocation is critical for a P3 project to be successful. P3s are characterized by a transfer of risk associated with a transfer of responsibilities, and essentially differ based on which risks and responsibilities are contractually transferred to the private sector. When the private sector assumes a risk in a P3, it becomes responsible for solving potential problems that might arise in project delivery and for absorbing related financial losses (or, conversely, for benefitting from related financial gains).

Risks usually assumed by the private sector include those associated with the phases of the project with which it will be involved, such as those related to uncertainties in construction cost, schedule, operations and maintenance and, in some cases, traffic and revenue. The public sector tends to retain risks related to uncertainties in environmental permitting and clearance, right of way acquisition and changes in applicable law.

In general, the cost to finance a project from private resources (taxable bonds, private loans and equity investments) as compared to public resources (tax-exempt bonds) is more expensive. To offset some of the financing cost differences other financing tools can be used such as Transportation Infrastructure Finance and Innovation Act (TIFIA) federal loans and private activity bonds (PABs). These financing tools provide access to low-interest loans or tax-exempt debt to private sector entities for transportation projects and reduce financing costs to levels more competitive with public debt. Many current P3 projects are utilizing the U.S. Department of Transportation's TIFIA loan program, but this loan program is limited to 33 percent of the total project costs and a maximum loan term of 35 years.

Areas to be examined related to I-70 would include:

- **Private financing and project acceleration** – P3s can facilitate the delivery of projects that otherwise might have been delayed or not built at all because of state fiscal constraints;
- **Cost and time savings** – can result in significant project cost and time savings compared to traditional procurement;

- **Lifecycle efficiencies** – can give the private contractor an incentive to reduce cost across a facility’s entire lifecycle through innovative design that reduces construction costs, high-quality project delivery that lowers the cost of maintenance and improvements, or up-front maintenance that avoids costly rebuilds in the future;
- **Improved project quality** – can give a private contractor more flexibility to incorporate state-of-the-art technologies and techniques which may result in best practices to be applied to other projects as well;
- **Risk transfer** – allocating risk to the party best able to manage it makes it less likely that each project risk will materialize, thus reducing the overall project risk; and
- **Public control and accountability** – by specifying the desired performance standards in the contract and holding the private entity financially accountable for meeting them the public sector can potentially enhance its control over the project’s outcome.

The P3 contract is paramount and should contain critical provisions that protect the public interest such as performance standards, toll policies or other payment mechanisms, public sector flexibility to provide transportation services, labor protections, public oversight and monitoring, revenue sharing, risk allocation, default provisions and termination or “buy back” options.

Likely Allocation of Risk

Risk Type	Public Risk Retaining	Risk Sharing	Private Risk Taking
Legislative	X		
Land Acquisition	X		
Design/Construction			X
Operating			X
Revenue (traffic)	?	?	?
Financial Market		X	
Dispute Resolution		X	

Using P3’s as a tolling option is not unique to Missouri. As state governments struggle to meet growing transportation infrastructure needs while revenues dwindle, leveraging resources through the use of public-private partnerships has become increasingly attractive. As of September 2011, 31 states and Puerto Rico had enacted laws authorizing P3s for highway and bridge projects with more than \$46 billion being invested in more than 80 transportation projects over the last 20 years. Currently 34 states have toll facilities operated by more than 100 public and private toll agencies.

Public Private Partnership Design Build Operate Maintain (DBOM):

The design-build-operate-maintain (DBOM) model is an integrated partnership that combines the design and construction responsibilities of design-build procurements with operations and maintenance. These project components are procured from the private sector in a single contract with financing secured by the public sector.

Responsibilities

With a DBOM contract, a private entity is responsible for design and construction as well as long-term operation and/or maintenance services. The public sector secures the project's financing and retains the operating revenue risk and any surplus operating revenue.

Advantages

The advantage of the DBOM approach is that it combines responsibility for usually disparate functions – design, construction and maintenance – under a single entity. This allows the private partners to take advantage of a number of efficiencies. The project design can be tailored to the construction equipment and materials that will be used. In addition, the DBOM team is also required to establish a long-term maintenance program up front, together with estimates of the associated costs. The team's detailed knowledge of the project design and the materials utilized allows it to develop a tailored maintenance plan that anticipates and addresses needs as they occur, thereby reducing the risk that issues will go unnoticed or unattended and deteriorate into much more costly problems.

Procurement Process

Owners award DBOM contracts by competitive bid following a transparent proposal process. Proposers respond to the specifications provided in the proposal documents and are usually required to provide a single price for the design, construction and maintenance of the facility for the time period specified. Proposers are also required to submit documentation on their qualifications, thereby allowing owners to compare the costs of the different offers and the ability of the proposers to meet their specified needs.

Standard Specifications

While the potential exists to reap substantial rewards by utilizing the integrated DBOM approach, owners who are not accustomed to this approach must take great care to specify all standards to which they want their facilities designed, constructed and maintained. With a DBOM procurement, owners relinquish much of the control they typically possess with more traditional project delivery. Unless requirements are identified up front as overall project specifications, they will not generally be met. This is important, because from design through operation, DBOM contracts can extend for periods of up to 20 years or more. Any changes to the contract provisions are negotiated between the owner and the DBOM contractor.

Design Build Finance Operate Maintain (DBFOM):

With the design-build-finance-operate-maintain (DBFOM) approach, the responsibilities for designing, building, financing, operating and maintaining are bundled together and transferred to private sector partners. There is a great deal of variety in DBFOM arrangements in the United

States, and especially the degree to which financial responsibilities are actually transferred to the private sector. One commonality that cuts across all DBFOM projects is that they are either partly or wholly financed by debt leveraging revenue streams dedicated to the project. Direct user fees (tolls) are the most common revenue source. Availability payments have also been used in this capacity. Future revenues are leveraged to issue bonds or other debt that provide funds for capital and project development costs. Often they are also supplemented by public sector grants in the form of money or contributions in kind, such as right-of-way. In certain cases, private partners may be required to make equity investments as well.

A Range of Project Sponsors

A range of organizations can function as the sponsor in DBFOM arrangements including:

- Departments of transportation
- Toll authorities
- Transit agencies
- Local governments

Responsibilities and Benefits

DBFOM concessions can be awarded for the construction of a new asset or for the modernization, upgrade or expansion of an existing facility. DBFOM concessions often extend for a period of 30 to 50 years or even longer, and are awarded under competitive bidding conditions. DBFOM procurements can be expected to shift a great deal of the responsibility for developing and operating surface transportation infrastructure to private sector partners. In nearly all cases, the public agency sponsoring a project retains full ownership over the project. However, as with the DBOM approach, the private partner assumes design-build responsibilities along with maintenance and operations to levels stipulated in the concession agreement. Depending on the revenue sources used and revenue risk allocation, private partners in the United States may or may not be exposed to revenue risks. DBFOM concessions are often attractive to public transportation agencies, as they can provide access to new sources of equity and financing, and deliver similar schedule and cost-efficiency benefits as design-build and DBOM procurements. Any changes to the contract provisions are negotiated between the owner and the DBFOM contractor.

DBFOM Models

Two DBFOM models have been used in the United States. The private-sector partner sets and adjusts toll rates to meet its payment requirements for financial loans.

Real Toll DBFOM Concessions

With this DBFOM model, tolls generated by the project are the primary revenue source for the P3 transaction. The private sector partner maintains the right to collect the revenues during the concession period but bears the risk that they may not meet expected forecasts.

To facilitate the agreement or make the project financeable in some cases, the public sector may provide limited financial assistance, taking such forms as a development subsidy, right of way provisions or limited revenue guarantees, but ultimately the private sector partner expects that the funds generated will be adequate to pay the underlying project loans and interest and make a fair profit on its investments of time, expertise and money. To protect the public sector in the event of robust revenue generation, some concession agreements can include a revenue-sharing provision between the private partner and public sector if revenues exceed certain specified thresholds or metrics.

Availability Payment DBFOM Concessions

With availability payment DBFOM concessions, the project's revenue risk is retained by the public sector sponsor. The sponsor pledges availability payments to compensate the concessionaire for its role in designing, constructing, operating and maintaining the facility for a set time period during which it receives a predictable, fixed set of income. Availability payments are often used for projects that are not tolled or for which toll revenues are not expected to cover debt service costs. Payments owed to the concessionaire may be secured by a revenue pledge or subject to appropriations. Availability payment P3 concessions are also likely to involve private equity, federal credit assistance and commercial debt.

Availability payments are made based on milestones, such as initially completing specified construction activities or subsequently meeting operational performance standards, including lane closures, incident management or snow removal. In the case of congestion pricing P3 projects, such as HOT lanes (High Occupancy Toll lanes), traffic level of service may be used as the primary performance metric. Depending on the structure of the P3 agreement, a private partner may not receive any payments until construction is complete, which could affect the magnitude of required upfront financing.

Long Term Lease Concession Option

This P3 model involves the long term lease of existing, publicly-owned facilities to a private sector concessionaire for a prescribed concession period during which they have the right to collect tolls on the facility. In exchange, the private partner must operate and maintain the facility and in some cases make improvements to it. The private partner must also pay an upfront concession fee.

Long term lease projects often extend for a period of 75 to 100 years, and are procured on a competitive basis, with awards going to the qualified bidder making the most attractive offer to the sponsoring agency. The most important criterion for the award of a long term lease concession generally is the amount of the concession fee. Other criteria may include the length of the concession period and the credit worthiness and professional qualifications of the bidders.

Long Term Lease Options

Long-term highway lease transactions can be grouped into the following three categories:

- Debt transfer lease transactions where a fee paid by the private concessionaire is used to defease the toll facility's underlying publicly-held debt, with no additional funds available to the public sponsor. Such transactions require the private concessionaire to maintain the road to specified standards throughout the concession period and may also require the private investors to make additional capital repairs to address safety and condition issues.
- Hybrid debt transfer and new construction lease transactions where the private investor pays a fee that is used to defease the underlying publicly-held debt on the facility and agrees to complete new center-line construction extending the existing toll facility. With this model additional payments in excess of the debt underlying the existing road are not made. In some cases, new construction may only be required at a future point in time if certain predetermined performance levels are achieved.
- Value extraction lease transactions where a fee paid by the private investor is used to defease any underlying public debt associated with the toll road and provide the public sponsor leasing the facility with a sizeable infusion of additional funds which it can use for other needs. These transactions require the private investor to maintain the road to specified standards throughout the concession period and may also require the private investors to make additional capital repairs to address safety and condition issues.

Recent Experience

Through 2013, five major long term lease transactions have been entered into in the United States.

Facility	Date	Length	Lease Term	Upfront Lease Payment	Lease Option	Cost to Customer	Commitments
Chicago Skyway (Chicago, IL)	January 2005	7.8 miles	99 years	\$1.83 billion	Value extraction	57 cents to \$4.52 per mile	O&M
Pocahontas Parkway (Richmond, VA)	June 2006	8.8 miles	99 years	\$611 million	Hybrid	36 cents to 82 cents per mile	O&M, Upgrade to electronic toll collection, Construction of the 1.58-mile Richmond Airport Connector
Indiana Toll Road (Northern Indiana)	June 2006	157 miles	75 years	\$3.85 billion	Value extraction	3 cents to 55 cents per mile	O&M (Filed for bankruptcy in 2013)

Northwest Parkway (Denver, CO)	November 2007	8 miles	99 years	\$303 million (\$40 million placed in escrow; release contingent on parkway extension w/in specified timeframe)	Debt transfer	43 cents to 86 cents per mile	O&M, \$200 million administrative fee (total over lease term, inflation adjusted), \$60 million contribution toward parkway extension w/in specified timeframe
PR-22 and PR-5 (Northern Puerto Rico)	September 2011	54.5 miles	40 years	\$1.08 billion	Value extraction	17 cents to 72 cents per miles	O&M, \$356 million in upgrades and safety improvements

Factors Affecting the Use of Long Term Leases

There are a number of factors that influence the use of long term leasing arrangements. For the public sector the most basic factors are the political and financial situation of individual states and local jurisdictions. When these two factors coincide, local leaders may make the decision to consider leasing arrangements. In cases where there is not a pressing financial need, local decision makers may explore the possibility of leasing toll road assets to ascertain whether the terms of a potential transaction would be attractive enough to move forward with an actual transaction. For private investors, the primary motivation for pursuing leasing opportunities is the potential to gain an adequate rate of return on their investment.

Moody's Investors Service has identified several characteristics that may make certain toll facilities good candidates for long-term lease arrangements. These include:

1. Established toll roads that have political limits on toll raising ability,
2. Roads owned by governments that are short of capital to fund government programs,
3. Roads with a significant number of non-resident users, such as truckers or tourists, who may be less able to effectively protest against privatization, and
4. Roads that are financially distressed but which may present a strategic business opportunity for concessionaires seeking to enter the U.S. market.

Potential Benefits of Long Term Leases

The potential benefits of long term lease transactions include:

- Depoliticization of toll setting process by transferring toll setting responsibility to the private sector
- Ability to reduce ongoing public sector operating, maintenance and capital improvement costs
- Acceleration of new construction or needed maintenance and capital improvements to the leased facility

- Debt restructuring in the case of underperforming toll roads at risk of default
- Ability to generate large upfront lease payments that can be used to fund other transportation improvements
- Risk transfer, chiefly traffic and revenue risk transfer to the private sector
- Better asset management through application of private sector operational and maintenance efficiencies
- Leverage the private sector to create multi-modal business opportunities to transform the location into a transportation hub

Public Policy Issues Associated with Long Term Leases

Several policy issues associated with long term leases need to be assessed carefully to ensure a beneficial outcome. One of the most important is the potential undervaluation of an asset to be leased. As was witnessed with the Chicago Skyway procurement where the value of the winning proposal was 2.6 times greater than that of the next highest bid, competition can help prevent undervaluation. Toll road owners considering leasing options should also seek the advice of financial advisors who can identify fair market values of lease transactions based on the anticipated revenue streams.

Other policy issues can be addressed in the legal terms and conditions underpinning lease transactions to ensure a fair outcome and protect the public. Such issues may include:

- Loss of public control over toll rates
- Potentially burdensome toll increases
- Inequitable return on private sector equity

The significance and implications of each of these issues would vary depending on the facility considered and various means exist for addressing or mitigating their effects. For example, a lease's terms and conditions can preserve some public control over toll rates. Similarly, caps can be placed on the private sector's rate of return. As with the Indiana Toll Road transaction, other regulations can be enacted to ensure that the lease proceeds are used to support transportation improvements in prescribed areas. Governments also provide oversight of the private sector partner's performance as well as include capital reinvestment, availability, safety, and customer services requirements in their lease agreements. Public agencies executing long term lease agreements can protect the public interest when they use these tools effectively.

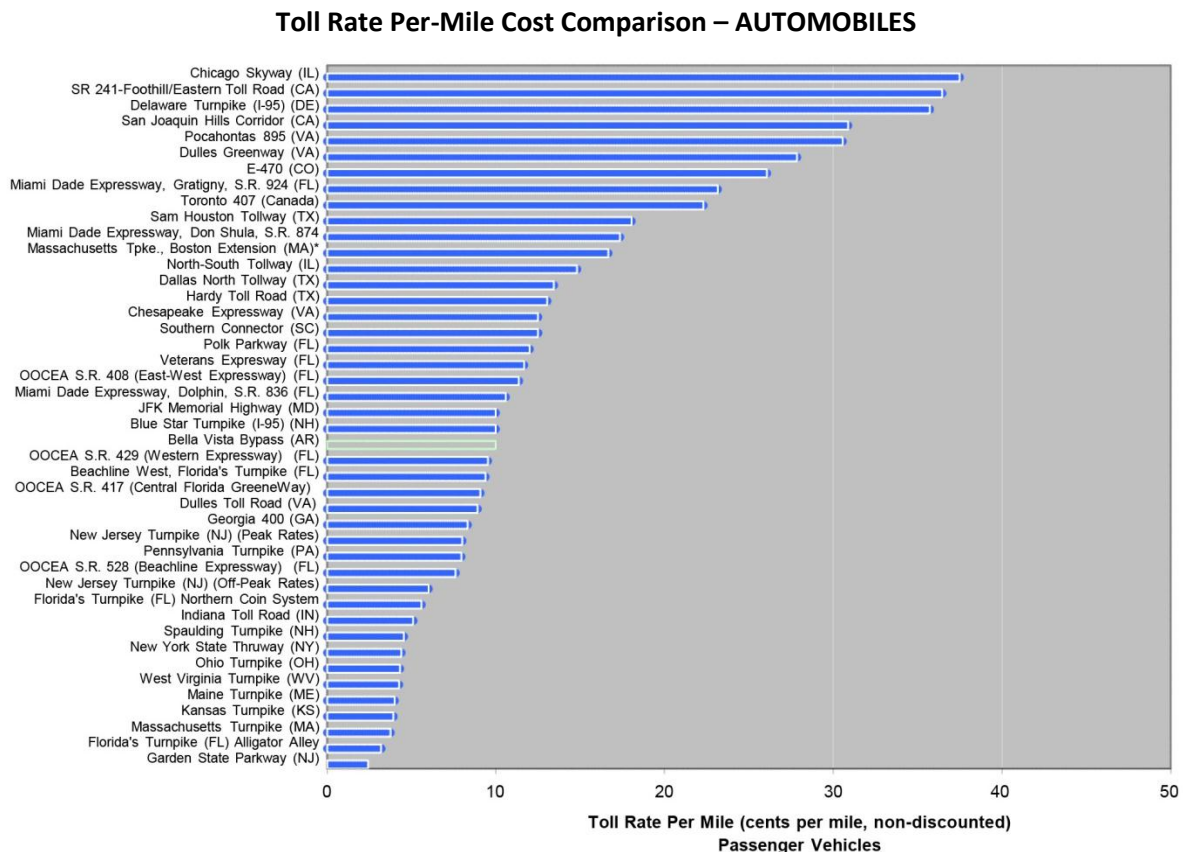
Project Links

- [Chicago Skyway - Chicago, Illinois](#)
- [Pocahontas Parkway / Richmond Airport Connector - Greater Richmond, Virginia](#)
- [Indiana Toll Road - Indiana](#)
- [Northwest Parkway - Denver Metro Region, Colorado](#)
- [PR-22 and PR-5 Lease - Puerto Rico](#)

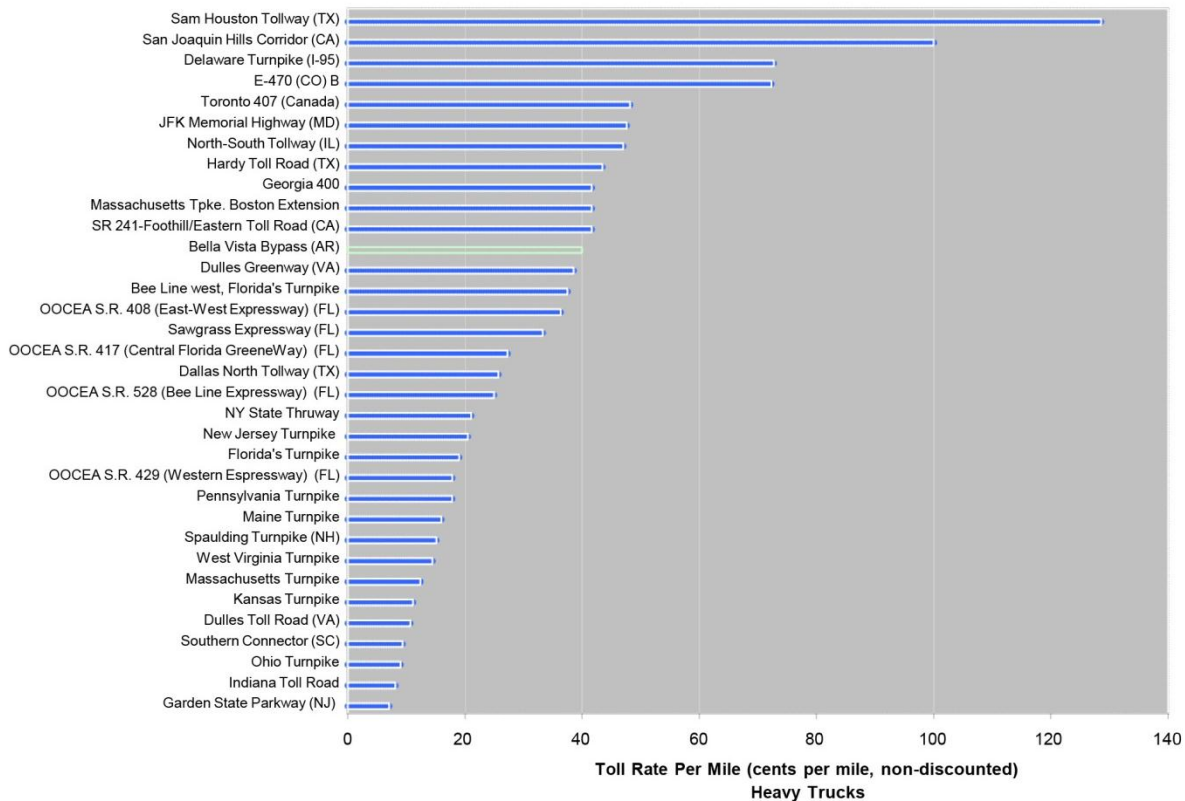
Toll Rates

The schedule of toll rates that would apply to various classes of vehicles would be determined by an investment grade traffic study. MoDOT anticipates those rates would be in the range of 10-15 cents per mile for automobiles and two to three times that for trucks. These rates are in keeping with those charged on other toll facilities as detailed earlier and in the charts that follow.

[The following charts are from a 2009 toll study on the Bella Vista Bypass for the Arkansas Department of Transportation. Additional state comparisons can be found in a 2013 report for the National Conference of State Legislatures that appears in a later tab.]



Toll Rate Per-Mile Cost Comparison – HEAVY TRUCKS



It is unreasonable to think that a toll would be charged only until such time as the initial investment to build the project was repaid. The term of a contract with a private sector partner would likely be in the range of 30-50 years which would coincide with the life-cycle of the facility, meaning that significant improvements to I-70 could be required about the time of the contract's expiration. A toll in perpetuity would facilitate the long-term needs of I-70 so the state does not face this dilemma again in the future. The mechanism to adjust toll rates would be carefully spelled out in the contract and would require involvement of the MHTC.

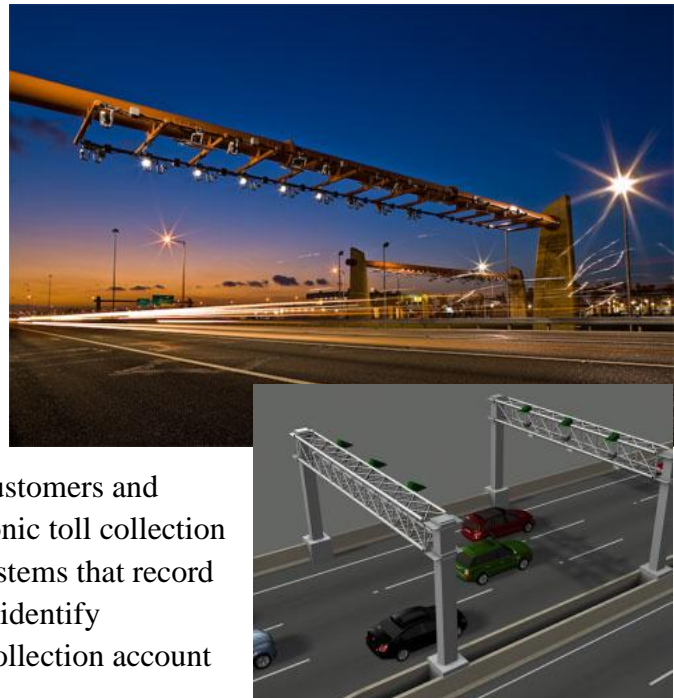
Operational Characteristics and Options:

Toll facilities generally take one of two forms – open or closed systems. The traditional – and now largely antiquated – is the closed system where it is impossible to enter or exit the system without paying the toll. The Kansas Turnpike, where every entry/exit ramp is controlled, is an example. Closed systems typically have few access points.

A closed system would not be practical for the 200 miles of I-70 between Kansas City and St. Louis which has more than 50 interchanges today. While some that are of close proximity could be combined, MoDOT has no intention to reduce access to I-70 or its adjacent communities.

Today's technology has enabled the creation of open-road tolling – the collection of tolls without the use of toll booths for toll collection. Slowing to throw a handful of quarters in a basket is a thing of the past.

The major advantage to open-road tolling is that users are able to drive through the toll collection zone at highway speeds without having to stop or even slow down to pay the toll. Tolls are typically collected using electronic toll collection for identification of customers and electronic payment of tolls. Many times electronic toll collection systems are supplemented by image capture systems that record license plate images. These images are used to identify customers who do not have an electronic toll collection account so they can be sent a bill or violation notice.



Transponders, small electronic tags, are placed on the windshield of drivers' cars when drivers open an account with the toll operator. Tolls are collected as the transponder is read at normal highway speeds by electronic scanners suspended from gantries above the highway. Motorists can link their transponders to credit card accounts to automatically charge pre-determined amounts when their account is low. Accounts can also be quickly refilled through a phone call, trip to a kiosk or office, or by visiting a website. Transponders may also emit a signal to drivers when their account is getting low.

This method of toll collection is fast becoming globally accepted as electronic toll collection technologies grow and demonstrate improved accuracy and affordability. Electronic collection systems are 33-50 percent less expensive than traditional "manned" tolling operations.

- **Higher performance and safety:** An electronic toll collection system provides uniform, highway-speed travel for the public, without the stop-and-go and the accident potential of traditional toll collection systems.
- **Efficiency:** An all-electronic system provides more efficient toll collection operations by eliminating queues at toll booths, lowering toll collection costs and enhancing customer service.
- **Sustainability:** Open-road tolling saves fuel and reduces vehicle emissions by eliminating waiting times at traditional toll booths. In addition, open-road tolling allows for expanded capacity at toll locations without the need to build additional infrastructure, reducing right of way needs and associated impacts.

The exact number and placement of toll collection zones on I-70 would be determined by an investment grade study and by proposals from the private sector. Previously MoDOT anticipated there would be four to six collection zones on I-70, but that number could be 6 or more. More collection stations mean lower toll rates per customer, and also assist in capturing tolls from the greatest number of drivers.

The flexibility offered by electronic open-road tolling systems is another advantage. Variable toll rates can be programmed, for instance, to offer reduced rates for long-haul trucks if they travel at night when traffic levels are lower, or to offer discounts for commuters who make relatively short trips on I-70. And, conceivably, drivers who enter and exit I-70 between toll collection zones may pay no toll at all.

Toll Roads in Other States

Although many toll roads exist in the U.S., most were constructed during the 1940s through the 1970s and are not good comparisons to I-70 in Missouri. Listed below are some of the newer toll systems that do not serve only as bypasses or loops around major metropolitan areas. These toll roads are all at least 50 miles long.

STATE/ROAD	TERMINI	LENGTH	TOLL FOR CARS*	AGE
Virginia, I-95 (not yet delivered)	D.C. to North Carolina border	179 miles	Not yet established	Future toll road
Texas, SH 130	Northern metro Austin south to I-10	88 miles	12-15 cents per mile	Completed 2012
Pennsylvania, Mon-Fayette Expressway (PA 43)	Pittsburgh suburbs Jefferson Hills south to near Morgantown, WV	52	8.3-10 cents per mile	Begun in 1977 and completed in 2012
Delaware, Korean War Veterans Hwy (DE 1)	I-95 near Wilmington, south to Dover	51 miles	4-8 cents per mile	Built 1993-1999

1) Virginia's I-95 Toll Road - This facility holds the same designation from FHWA as I-70 in Missouri to enable an existing interstate highway to be converted to a tolled facility. Its development is underway. The intent is to toll the entire length of I-95 (from North Carolina to the District of Columbia). No other decisions have been finalized including how to toll, how frequently to toll or the amount.

2) Texas State Highway 130 - Most of Texas' toll roads exclusively serve large urban areas like Dallas-Ft. Worth and Houston. One new toll road, however, extends beyond a metropolitan area. State Highway (SH) 130 extends 88 miles and essentially serves as a bypass of metro Austin. It connects I-35 at Georgetown, a city of about 50,000 located about 28 miles north of Austin, with I-10 at a location about 45 miles northeast of San Antonio and 45 miles south of Austin.

SH 130 was constructed to relieve congestion on I-35 and other major highways within the Austin-San Antonio corridor. SH 130's tolls are \$0.12 to \$0.15 per mile for a two-axle vehicle. It has 15 tolling stations, or gantries, along its length.

The first segment of SH 130 opened to the public in 2006, and by 2008 was extended southward to US 183. On June 28, 2006, Cintra-Zachry, (Cintra is a Spanish developer and Zachry Construction is headquartered in San Antonio) reached a \$1.3 billion agreement with the state to build a 30+ mile segment from US 183 to I-10 near Seguin. In exchange for their investment, Cintra-Zachry received the right to collect tolls for 50 years in a revenue sharing agreement with Texas. The state owns the road while the developer is responsible for financing, design, construction, operation and maintenance over the life of the agreement.

3) Pennsylvania's Mon-Fayette Expressway - Begun in 1977 and completed in 2012, this 52-mile road connects the southeastern suburbs of Pittsburgh to the West Virginia border to the south, just north of Morgantown WV. The tollway was built to spur economic development. Cars pay about 8.3 cents per mile (EZ Pass) or just over 10 cents per mile (cash). The West Virginia portion of this toll road is under construction. Because a toll plaza was not incorporated in the design of the short West Virginian section, officials from both West Virginia and Pennsylvania are contemplating the possibility of sharing the tolls collected in Pennsylvania.

4) Delaware's Route 1 - Delaware Route 1 is 103 miles long, but the northern 51 miles is a toll road connecting Wilmington to Dover. All of its length is within metropolitan boundaries, but some of this distance is not densely populated. It was completed in 1999. DelDOT charges a toll of \$2 on weekdays (\$4 on weekends); or almost 4 cents per mile for autos on weekdays and almost 8 cents per mile on weekends.

5) Other Toll Roads - For very general comparison, some other lengthy U.S. toll roads, although built decades ago, are listed below. Each of these toll roads was absorbed into the interstate highway system:

- Florida Turnpike - 265 miles, almost 7 cents per mile for autos. It connects Ocala and Orlando with northern metro Miami. It is considered the third busiest toll road in the U.S. Constructed from 1957 to 1974.
- Kansas Turnpike - 236 miles, about 7.2 cents per mile. It connects Kansas City, Kansas to Wichita and continues to the Oklahoma state line. It was built in the mid 1950s.
- Ohio Turnpike - 241 miles across northern Ohio, over 4 cents per miles for autos with EZ Pass and over 6 cents per mile for those without. Along the way it connects Cleveland-Akron with Toledo. The road was built in the mid-1950s.
- Pennsylvania Turnpike - Traversing the entire state, the 360-mile tollway connects metro Philadelphia to metro Pittsburgh and continues toward Cleveland, Ohio. Cars pay about 8.6 cents to almost 10 cents per mile. The roadway was originally built in the early 1940s.

- Will Rogers Turnpike - 88 miles long and fairly typical of Oklahoma's extensive turnpike system, it charges cars about 4.5 cents per mile. It connects Tulsa to the Missouri border near Joplin. The turnpike opened to traffic in 1957.

The Bottom Line

The most important reason to invest in a reconstructed I-70 is that it will improve safety for all Missourians who travel along this vital corridor.

MoDOT conducted a two-phase tolling feasibility study in 2002 and 2005 that identified a handful of projects that would be possible in a tolled environment including I-70, I-44 and U.S. Route 71 (now I-49). From a high-level view, it indicated that a toll would support a project in the range of what has been suggested in this report.

However, since MoDOT's annual construction budget is projected to be \$325 million in 2017 and there is no indication of additional federal or state revenue, MoDOT does not have the money to finance an I-70 tolling project.

In MoDOT's current financial condition, with an annual construction budget that is projected to be \$325 million in 2017, and with no indication that additional revenue is on the way for transportation at either the federal or state levels, MoDOT does not have the money to tackle a project the magnitude of I-70.

Without a significant investment in Missouri's infrastructure, life on I-70 will continue to degrade. Based on available resources, MoDOT will continue to resurface and maintain I-70 to the best of its ability. However, incidents and maintenance operations will increase causing lengthy backups. And, drivers will continue to experience increased numbers of trucks and congested conditions, which also compromise economic development opportunities in our state.